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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/700,877 11/20/00 AKEMAKOU

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MMC2/1109

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BETHESDA MD 20817

EXAMINER

CUEVAS, P

ART UNIT

PAPER NUMBER

2834

DATE MAILED:

11/09/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/700,877

Applicant(s)

AKEMAKOU, DOKOU ANTOINE

Examiner

Pedro J. Cuevas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☒ Claim(s) 6-8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

2. Figures 1a-1d, 2a-2c and 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the rare earth magnet encircled by the ferrite magnets must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

4. The drawings are objected to under 37 CFR 1.83(b) because they are incomplete. 37 CFR 1.83(b) reads as follows:

When the invention consists of an improvement on an old machine the drawing must when possible exhibit, in one or more views, the improved portion itself, disconnected from the old structure, and also in another view, so much only of the old structure as will suffice to show the connection of the invention therewith.

Correction is required.

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Specification

5. The following guidelines illustrate the preferred layout and content for patent applications. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

The following order or arrangement is preferred in framing the specification and, except for the reference to "Microfiche Appendix" and the drawings, each of the lettered items should appear in upper case, without underlining or bold type, as section headings. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) Title of the Invention.
- (b) Cross-References to Related Applications.
- (c) Statement Regarding Federally Sponsored Research or Development.
- (d) Reference to a "Microfiche Appendix" (see 37 CFR 1.96).
- (e) Background of the Invention.
 - 1. Field of the Invention.
 - 2. Description of the Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) Brief Summary of the Invention.
- (g) Brief Description of the Several Views of the Drawing(s).
- (h) Detailed Description of the Invention.
- (i) Claim or Claims (commencing on a separate sheet).
- (j) Abstract of the Disclosure (commencing on a separate sheet).
- (k) Drawings.
- (l) Sequence Listing (see 37 CFR 1.821-1.825).

6. The spacing of the lines of the specification is such as to make reading and entry of amendments difficult. New application papers with lines double spaced on good quality paper are required.

7. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: A Rotary Electrical Machine Having Magnet Arrangements With Magnets Of Different Compositions.

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8. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The term "encircled" used in claim 4.

Claim Objections

9. The claims are objected to because the lines are crowded too closely together, making reading and entry of amendments difficult. Substitute claims with lines one and one-half or double spaced on good quality paper are required. See 37 CFR 1.52(b).

10. Claim 4 is objected to because of the following informalities: the term "encircled" has not been properly defined. Appropriate correction is required.

11. Claims 6-8 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from another multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 6-8 have not been further treated on the merits.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

13. Claim 4 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for surrounding a rare earth magnet, does not reasonably provide enablement for encircling the rare earth magnet. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

16. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

In the present instance, claim 1 recites the broad recitation a rotary electrical machine, and the claim also recites an alternator or an alternator-starter, which is the narrower statement of the range/limitation.

17. Also, claim 5 recites the broad recitation indexing means, and the claim also recites a chamfered portion (9000a) or a notch (9000b), which is the narrower statement of the range/limitation.

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18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,015,902 to Leitgeb in view of U.S. Patent No. 4,727,273 to Tanaka.

Leitgeb discloses the construction of a rotary electrical machine (Fig.1) for a motor vehicle, comprising a stator (5), a rotor (1), an air gap (11) between the stator (5) and the rotor (1), and permanent magnets (4 & 9) incorporated inside the rotor (1), wherein the magnets (4 & 9) constitute at least two groups each of which is defined by a specific type of composition, characterised in that a plurality of sub-assemblies (4 + 9) is provided, each sub-assembly (4 + 9) combining at least one magnet of the first group with a magnet of the second group, at least one of the magnets (9) being disposed radially (both radial segments in contact with magnet 4) so as to generate an orthoradial magnetic flux through bridge portion of magnet 9 (the portion joining the radial segments).

However, it fails to disclose an electrical machine characterised in that each sub-assembly comprises a first group (9) of magnets containing rare earths situated close to the airgap (11), arranged in superimposed relationship with a second group (4) consisting of ferrite magnets.

Tanaka teaches the construction of a permanent magnet type electric motor having magnetic poles, each composed of a rare earth metal containing magnet, a ferrite magnet and an auxiliary magnetic pole of a high permeability material for the purpose of minimizing the effect

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of flux looping from the rare earth metal containing magnet to the ferrite magnet and having a uniform flux density in the magnetic pole surface.

It would have been obvious to one skilled in the art at the time the invention was made to use types of magnets disclosed by Tanaka on the rotary electrical machine disclosed by Leitgeb for the purpose of minimizing the effect of flux looping from the rare earth metal containing magnet to the ferrite magnet and having a uniform flux density in the magnetic pole surface.

20. With regards to claim 2, Leitgeb discloses a plurality of sub-assemblies (4 + 9) of magnets (4 & 9), which are provided inside the rotor as shown in Figure 2.

21. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,015,902 to Leitgeb in view of U.S. Patent No. 4,727,273 to Tanaka as applied to claims 1 and 2 above, and further in view of JP-58-063059 to Hiroshi.

Leitgeb in view of Tanaka disclose the claimed invention except for a magnet sub-assembly, which comprises a magnet containing rare earths (1) situated close to the airgap, arranged in superimposed relationship in a generally radial direction with a ferrite magnet (3).

Hiroshi teaches the construction of an electric motor having:

a rare earth permanent magnet (1) surrounded in superimposed relationship in a generally radial direction with a ferrite magnet (3), and

characterised in that each sub-assembly (4 + 9) comprises a magnet (1) containing rare earths in superimposed relationship in a radial direction with two ferrite magnets (2, 3) by which it is encircled,

for the purpose of having a motor with good productivity and small eddy current loss.

It would have been obvious to one skilled in the art at the time the invention was made to use the magnet configuration disclosed by Hiroshi on the rotary electrical machine disclosed by Leitgeb in view of Tanaka for the purpose of having a motor with good productivity and small eddy current loss.

22. Claims 5/3 and 5/4 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,015,902 to Leitgeb in view in view of U.S. Patent No. 4,727,273 to Tanaka, further view of JP-58-063059 to Hiroshi as applied to claims 3 and 4 above, in further view of U.S. Patent No. 6,031,311 to Lee.

Leitgeb in view of Tanaka, further in view of Hiroshi discloses the claimed invention except for each sub-assembly including indexing means.

Lee teaches the construction of a brushless DC motor having a stator and a rotor, the rotor having permanent magnets (2) with notches (5) for the purpose of more effectively prevent the vortex of the magnetic field, and increase the efficiency of the motor.

It would have been obvious to one skilled in the art at the time the invention was made to use the notched magnets disclosed by Lee on the rotary electrical machine disclosed by Leitgeb in view of Nondahl, further in view of Hiroshi for the purpose of more effectively prevent the vortex of the magnetic field, and increase the efficiency of the motor.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pedro J. Cuevas whose telephone number is (703) 308-4904. The examiner can normally be reached on M-F from 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Néstor R. Ramírez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-1341 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

pjc
November 5, 2001


NESTOR RAMIREZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2000